

Human Prenatal Development

Investigation 4 Key

Name: _____ Date: _____

Please use the back of this quiz if you need additional space.

1. What is meant by growth during prenatal development? Explain how growth involves more than simply getting bigger. ***Growth during prenatal development includes an increase in cell number, size, and complexity. It also involves the refinement and maturation of tissues and organs, not just an increase in overall size. (Accept answers that distinguish growth from simple enlargement.)***
2. During prenatal development, the fetus begins to respond to sounds from the outside world. How do structures such as the placenta and amniotic fluid both protect the developing fetus and allow sensory experiences like sound to occur? ***The placenta and amniotic fluid protect the developing fetus by cushioning it from physical shock and regulating the internal environment. At the same time, sound vibrations can travel through fluid, allowing the fetus to experience muffled sounds from outside the womb while remaining protected. (Accept answers that recognize both protection and controlled sensory exposure.)***
3. Why is it important that the fetus experiences the external environment in a limited and protected way rather than being fully exposed? Explain how this balance supports healthy development. ***Limited and protected exposure allows the fetus to develop sensory systems without being overwhelmed or harmed. Structures such as the placenta and amniotic fluid filter and soften external stimuli, supporting gradual adaptation while maintaining a stable internal environment. (Look for the ideas of balance, protection, and gradual development.)***
4. Which statement best describes prenatal development after the basic body plan is established? (circle one)
 - A. Development becomes random because most structures already exist
 - B. Growth continues through repeated mitosis only
 - C. Structures mature, refine, and become functionally integrated
 - D. No further organization is required
5. How does the orderly growth and integration of body systems during prenatal development support survival after birth? ***Orderly growth and integration ensure that organs and body systems are prepared to function together at birth. This coordination allows essential processes such as breathing, circulation, and feeding to occur effectively, supporting survival outside the womb.***
6. ***(Look for connection between prenatal organization and postnatal function.)***